

## Session 5: Movement

Date: Wednesday 1 November, 2017  
Time: 09:45 – 10:05  
Room: Seminar Room

### **Spatio-temporal variation in emigration and immigration is density-dependent in a house sparrow metapopulation**

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We studied dispersal dynamics on 11 islands across 22 years in a house sparrow (*Passer domesticus*) metapopulation in northern Norway. There was considerable spatial heterogeneity in dispersal within the metapopulation. Outer islands farther from the mainland and with a harsher environment had higher dispersal rates compared to the inner islands with a more benign environment closer to the mainland. On the inner islands, the proportion of emigrants was negatively related to population size. Conversely, on the outer islands, emigration increased with population size. The relationship between immigration and population size was not so clear, but there was a trend suggesting that immigration was lower in islands with larger populations. Heterogeneity in dispersal rates in our system therefore suggests active attraction (less emigration and more immigration) towards larger populations on the more stable inner islands. However, in the outer islands there was more emigration and less immigration in islands with larger populations, suggesting source-sink dynamics. Such spatial heterogeneity in dispersal dynamics will have substantial demographic and evolutionary consequences in the metapopulation.